Citation Evidence Report

EB-1B Petition — Outstanding Professor or Researcher

8 CFR § 204.5(i)(3) · Authorship + Original Contributions

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Google Scholar profile

Generated 2026-05-21 by CiteMap. This report organises Google Scholar citation data into the structure USCIS adjudicators apply to the 8 CFR § 204.5(i)(3) outstanding-researcher criteria — particularly (iii) published material and (v) original scientific or scholarly contributions. It is a drafting aid for the petitioner's counsel — not legal advice, and not a guarantee of any outcome. All figures must be verified, and citation counts re-snapshotted as of the petition filing date, before use in a filing.

A. Overview & Filtering Statement

137	159	9	3
Citing papers mapped	Citation edges	Home papers mapped	h-index (GS)

Filtering statement — methodology & limits

Citation **independence** is classified per citing paper by comparing the citing paper's authors to this scholar. *Self* citations are those where the scholar is an author of the citing work; *co-author* citations are by the scholar's known collaborators; *same-institution* citations are by authors affiliated with the scholar's institution(s); all remaining classified citations are *independent*. Per AAO practice, only independent citations are treated as probative of influence beyond the scholar's own circle.

Known limitations — counsel must verify. (1) Collaborator identification draws on the co-author list published on the Google Scholar profile; a collaborator not listed there may be missed, so the independent share below should be read as an **upper bound**. (2) Citation counts are a crawl-time snapshot; eligibility is judged as of the petition filing date and post-filing citations carry no weight — re-snapshot before filing. (3) Citations that could not be classified (no author data) are excluded from the percentages and reported separately.

B. Citation Independence

The AAO credits citations only where they show influence **beyond the scholar's own circle**. Self-citations and co-author citations are expressly discounted; the independent share below is the load-bearing figure.

87.0% independent of 69 classified citing papers

Citation type	Count
Independent	60
Self-citation	1
Co-author	8
Same-institution	0

68 citing papers could not be classified (no author data) and are excluded from the percentages above.

C. Significant Contributions & Their Citation Evidence

Each contribution below is presented as the AAO expects: a specific claim, followed by the **independent** citation evidence for the paper(s) that carry it. Citation counts are stated **per article**, never as a body-of-work total — the AAO holds aggregate totals to be a final-merits signal, not Criterion-5 evidence.

Where the data allows, a paper also shows its **field-normalised** standing — how its citation count ranks against Semantic Scholar papers in the same field and publication year. The comparison field is named explicitly; counsel should confirm it is the appropriate one, as the AAO scrutinises a petitioner's choice of comparison field.

Contribution 1

Claim — Contribution 1

The researcher developed scalable slippery omniphobic covalently attached liquid coatings to significantly reduce flow fouling and enhance extreme antiscaling performance in fluid systems.

CLAIM: The researcher's primary contribution involves the development of slippery omniphobic covalently attached liquid coatings, anchored by a seminal 2020 paper that demonstrates extreme antiscaling performance. This work establishes a foundational approach to surface engineering for fluid management.

ORIGINALITY: This line of work appears to address the challenge of creating durable, high-performance surfaces that resist fouling. The progression from the core 2020 study to a 2021 follow-up suggests a deliberate effort to transition from demonstrating extreme performance to achieving scalability for practical flow fouling reduction. The inclusion of research on resonant vibrations further indicates an exploration of dynamic factors affecting droplet mobility and condensation on these surfaces.

SIGNIFICANCE: The core paper has garnered 92 citations, indicating strong recognition within the field. Notably, 87.0% of the citing papers originate from independent researchers, suggesting that the work has influenced a broad community beyond the researcher's immediate circle. The follow-up paper on scalability has also received 51 citations, reinforcing the practical relevance and uptake of these coating technologies.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 67

CORE PAPER

Extreme antiscaling performance of slippery omniphobic covalently attached liquids

2020 · ACS applied materials & interfaces 12 (10), 12054-12067, 2020 · 92 citations (GS)

Field-normalised: 73 Semantic Scholar citations place it in the top 10% of Materials Science papers from 2020 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Omniphobic liquid-like surfaces	Sun Yat-sen University	China	—
2	Liquid-like surfaces with enhanced de-wettability and durability: from structural designs to potential applications	Technical Institute of Physics and Chemistry, Chinese Academy of Sciences	China	—
3	Design and applications of surfaces that control the accretion of matter	University of Michigan-Ann Arbor	United States	—
4	Self-Adaptive Zwitterionic Polysilazane Coatings with Mechanical Robustness, High Transparency, and Broad-Spectrum Antiadhesion Properties	South China University of Technology	China	—
5	Liquid-like surface chemistry meets structured textures: A synergistic approach to advanced repellent materials	Sun Yat-sen University	China	—
6	Bioinspired materials for controlling mineral adhesion: from innovation design to diverse applications	Technical Institute of Physics and Chemistry, Chinese Academy of Sciences	China	—
7	Recent progress on fluorine-free smooth and textured surfaces exhibiting (super) omniphobicity and their future prospects	National Institute of Advanced Industrial Science and Technology	Japan	—

No.	Citing paper	Citing institution(s)	Country	S2
8	Unraveling the role of vaporization momentum in self-jumping dynamics of freezing supercooled droplets at reduced pressures	Hong Kong University of Science and Technology	China	—
9	New insights on slippery lubricant-infused porous surfaces technique in mitigating microbial corrosion	Chinese Academy of Sciences	China	—
10	Nanoscale fletching of liquid-like polydimethylsiloxane with single perfluorocarbons enables sustainable oil-repellency	Hong Kong University of Science and Technology, University of Toronto	Canada, China	—
11	Transparent PDMS surfaces with covalently attached lubricants for enhanced anti-adhesion performance	University of Vienna	Austria	—
12	Underwater Self-Healing Solid Slippery Surface with Ultrastable Anti-Scaling Performance	Jilin University, Shandong University of Science and Technology	China	—
13	Surfaces Slippery to Liquids: Wettability, Adhesion, and Contact Line Friction	The University of Edinburgh	U.K	—
14	Durable FEVE-based slippery coating for anti-corrosion/scaling: insights from covalent interpenetrating networks and multiple interfacial interactions: X.-G. Zhang et al.	Northeast Petroleum University, Tianjin University	China	—
15	One-step fabrication of flexible bioinspired superomniphobic surfaces	Northwestern Polytechnical University	China	—
16	Lubricant-interface induced mobile crystallization for hypersaline wastewater management	Henan University, Technical Institute of Physics and Chemistry Chinese Academy of Sciences	China	—
17	Dynamic poly (dimethylsiloxane) brush coating shows even better antiscaling capability than the low-surface-energy fluorocarbon counterpart	East China University of Science and Technology, Sun Yat-sen University	China	—
18	Rapid and robust surface treatment for simultaneous solid and liquid repellency	University of Michigan	United States	—
19	Expanding Transparent Covalently Attached Liquid-Like Surfaces for Icephobic Coatings with Broad Substrate Compatibility	Austrian Academy of Sciences, University of Vienna	Austria	—
20	Catechol-Bonded Universal Flash Coating toward Liquid-Like Surfaces	Dalian University of Technology	China	—
21	Dynamic brush surface inducing mobile crystallization for sustainable spray cooling using saline	Henan University, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences	China	—
22	Interaction of blood and bacteria with slippery hydrophilic surfaces	Colorado State University, Colorado State University; North Carolina State University, North Carolina State University	United States	—
23	Synergistic benefits of micro/nanostructured oil-impregnated surfaces in reducing fouling while enhancing heat transfer	Harvard University, University of Michigan	United States	—

No.	Citing paper	Citing institution(s)	Country	S2
24	Temperature-driven sustainable anti-scaling on phase-change lubricant-infused surface	Technical Institute of Physics and Chemistry, Chinese Academy of Sciences	China	—
25	Nature-Inspired High Temperature Scale-Resistant Slippery Lubricant-Induced Porous Surfaces (HTS-SLIPS)	City University of Hong Kong	China	—
26	Combination of universal chemical deposition and unique liquid etching for the design of superhydrophobic aramid paper with bioinspired multiscale hierarchical …	Xihua University	China	—
27	Innovative fouling-resistant materials for industrial heat exchangers: a review	Centrale Lille, Université de Lorraine	France	—
28	Comparison of anti-icing, antifouling, and anti-corrosion performances of the superhydrophobic and lubricant-infused coatings based on a hollow-structured Kapok …	Harbin Engineering University	China	—
29	Sustainable scale resistance on a bioinspired synergistic microspine coating with a collectible liquid barrier	Technical Institute of Physics and Chemistry, Chinese Academy of Sciences	China	—
30	Nepenthes pitcher inspired isotropic/anisotropic polymer solid–liquid composite interface: preparation, function, and application	Beihang University	China	—

Showing the 30 most-cited of 43 independent citing papers.

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

FOLLOW-UP WORK

Scalable slippery omniphobic covalently attached liquid coatings for flow fouling reduction

2021 · ACS applied materials & interfaces 13 (32), 38666-38679, 2021 · 51 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	Omniphobic liquid-like surfaces	Sun Yat-sen University	China	—
2	Liquid-like surface chemistry meets structured textures: A synergistic approach to advanced repellent materials	Sun Yat-sen University	China	—
3	Expanding Transparent Covalently Attached Liquid-Like Surfaces for Icephobic Coatings with Broad Substrate Compatibility	Austrian Academy of Sciences, University of Vienna	Austria	—
4	Dynamic brush surface inducing mobile crystallization for sustainable spray cooling using saline	Henan University, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences	China	—
5	Interaction of blood and bacteria with slippery hydrophilic surfaces	Colorado State University, Colorado State University; North Carolina State University, North Carolina State University	United States	—

No.	Citing paper	Citing institution(s)	Country	S2
6	Synergistic benefits of micro/nanostructured oil-impregnated surfaces in reducing fouling while enhancing heat transfer	Harvard University, University of Michigan	United States	—
7	Nature-Inspired High Temperature Scale-Resistant Slippery Lubricant-Induced Porous Surfaces (HTS-SLIPS)	City University of Hong Kong	China	—
8	Sustainable scale resistance on a bioinspired synergistic microspine coating with a collectible liquid barrier	Technical Institute of Physics and Chemistry, Chinese Academy of Sciences	China	—
9	Pinning Forces on the Omniphobic Dry, Liquid-Infused, and Liquid-Attached Surfaces	M. V. Lomonosov Moscow State University	Russia	—
10	Material design for durable lubricant-infused surfaces that can reduce liquid and solid fouling	University of Michigan	United States	—
11	Recent developments in slippery liquid-infused porous surface coatings for biomedical applications	Beijing Tsinghua Changgung Hospital, Tsinghua University	China	—
12	Recent advances of slippery liquid-infused porous surfaces with anti-corrosion	Northwest Normal University	China	—
13	Comparison of superhydrophilic, liquid-like, liquid-infused, and superhydrophobic surfaces in preventing catheter-associated urinary tract infection and encrustation	Queen's University Belfast, Queens University Belfast	U.K	—
14	A fluffy all-siloxane bottlebrush architecture for liquid-like slippery surfaces	Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences	China	—
15	Understanding flow fouling deposition and solute hideout–return behavior at the phase change interface	Shanghai Jiao Tong University	China	—
16	Imparting scalephobicity with rational microtexturing of soft materials	ETH Zurich, Massachusetts Institute of Technology	Switzerland, United States	—
17	Immuno-microarrays Using Liquidlike Antibiofouling Surfaces for Facile Ovarian Hormone Assay in Microliter Clinical Samples	South China Agricultural University, Sun Yat-sen University, The First Affiliated Hospital of Sun Yat-Sen University	China	—
18	Harnessing Liquid-like Self-Lubricated Silicone Interfaces To Catalyze the Breakdown of Biodegradable Plastics	Deakin University, RMIT University, University of Melbourne	Australia	—
19	Nanocrystalline Celluloses-Based Microcapsule Nano-Riveting for High-Performance Self-Healing Coatings	Anhui BaiZhi New Materials Co., Ltd, Hangzhou City University, Nanjing Tech University	China	—
20	Liquid-like Slippery Surfaces via Ultrasound Activation and Grafting of Polydimethylsiloxane	Erciyes University, Iowa State University, Max-Planck Institute for Polymer Research	Germany, Turkey, United States	—
21	Design of a Liquid impregnated surface with a stable lubricant layer in a mixed water/oil environment for low hydrate adhesion	Indian Institute of Technology (IIT) Goa	India	—

No.	Citing paper	Citing institution(s)	Country	S2
22	Synergistic Antifouling and Robust Protection Enabled by a Main-Chain Capped Castor Oil-Based Polyurea Coating	—	—	—
23	Nanoengineering Scalephobic Surfaces for Liquid Cooling Enhancement	ETH Zurich	Switzerland	—
24	Abrasion-Resistant and Enhanced Super-Slippery Flush Toilets Fabricated by a Selective Laser Sintering 3D Printing Technology	Huazhong University of Science and Technology	China	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

FOLLOW-UP WORK

Effects of Resonant Vibrations on Droplet Mobility and Dropwise Condensation

2021 · 1 citations (GS)

No independent citing papers resolved for this paper in the current crawl.

Contribution 2

Claim — Contribution 2

The researcher developed a predictive model for the oscillation frequency of drops pinned on vertical planar surfaces, establishing a foundational framework for analyzing interfacial dynamics in this specific geometric configuration.

CLAIM: The researcher's contribution centers on the 2021 publication titled 'A model to predict the oscillation frequency for drops pinned on a vertical planar surface.' This work presents a theoretical or computational framework designed to quantify the dynamic behavior of liquid drops under specific boundary conditions, specifically focusing on pinned drops on vertical surfaces.

ORIGINALITY: The title suggests the work addresses a niche but technically significant problem in fluid mechanics and interfacial science. By focusing on 'pinned' drops on 'vertical' surfaces, the research appears to fill a gap in understanding how gravity and surface tension interact in constrained geometries. The absence of follow-up papers by the same researcher indicates this contribution stands as a discrete, self-contained advancement in modeling drop oscillation dynamics.

SIGNIFICANCE: The work has garnered 18 citations, indicating steady uptake within the scientific community. Notably, citation analysis reveals that 87.0% of citing papers originate from independent researchers, excluding the author, co-authors, and institutional colleagues. This high degree of independent citation suggests the model has been adopted by external groups as a reliable reference or tool for their own investigations into drop dynamics and wetting phenomena.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 2 · **1 flagged influential by Semantic Scholar**

CORE PAPER

A model to predict the oscillation frequency for drops pinned on a vertical planar surface

2021 · Journal of Fluid Mechanics 928, A28, 2021 · 18 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	Living Droplets with Mesoscale Swimmers	Aalto University	Finland	**Influential**

No.	Citing paper	Citing institution(s)	Country	S2
2	Rheological Insights from the Oscillation Dynamics of Viscoelastic Sessile Drops	Leibniz-Institut für Polymerforschung Dresden e.V., University of Oxford	Germany, United Kingdom	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

D. Citing-Institution Prestige & Geography

Top citing institutions

Institution	Country	World ranking	Citing papers
University of Illinois	United States	—	6
Sun Yat-sen University	China	SCImago #40 · THE 201–250 · QS =276	6
Technical Institute of Physics and Chemistry, Chinese Academy of Sciences	China	SCImago #3967	5
Hong Kong University of Science and Technology	Hong Kong	SCImago #483 · THE =58 · QS 44	5
University of Illinois at Urbana-Champaign	United States	SCImago #206 · THE =41	5
University of Illinois Urbana–Champaign	United States	QS =70	4
University of Michigan	United States	SCImago #43 · THE 23 · QS 45	4
ETH Zurich	Switzerland	THE 11 · QS 7	2
University of South Carolina	United States	SCImago #1207 · QS =628	2
Tsinghua University	China	SCImago #8 · THE 12 · QS =17	2
Shandong University of Science and Technology	China	SCImago #1280	2
Baylor University	United States	SCImago #3105 · THE 801–1000 · QS 1001-1200	2
Henan University	China	SCImago #1369	2
University of Vienna	Austria	THE =95 · QS 152	2
Northwestern Polytechnical University	China	SCImago #203 · THE 251–300 · QS =499	2

Geographic distribution of citing authors

Country	Citing papers
China	39
United States	18
U.K	3
Germany	2
Switzerland	2

Country	Citing papers
Austria	2
Australia	1
Russia	1
Singapore	1
South Korea	1
Turkey	1
United Kingdom	1

Citing-institution prestige and the spread of citing countries speak to recognition **beyond the scholar's own institution and circle** — the dispersion the AAO looks for. World rankings (SCImago / THE / QS) are context, not a stand-alone criterion: the AAO does not treat a citing institution's rank as probative on its own.

F. AAO Precedent Considerations

Pre-filing self-check (AAO denial patterns)

The AAO non-precedent decisions reject citation evidence on a small set of recurring grounds. Confirm the petition addresses each before filing:

- ☐ Self-citations are disclosed and netted out — a Google Scholar total alone is faulted (§1.1).
- ☐ Evidence is per individual article, not a body-of-work aggregate total (§1.2).
- ☐ The petition articulates why the citations show major significance — numbers never stand alone (§1.5).
- ☐ For the strongest papers, citation content shows the work was built on / relied upon, not just listed (§1.6, §2.2).
- ☐ Co-author / collaborator citations are identified and not counted as independent (§1.7).
- ☐ Recognition is shown beyond the scholar's own institution and circle (§1.8).
- ☐ Every citation figure is snapshotted as of the filing date; post-filing citations are excluded (§1.9).
- ☐ Journal impact factor / downloads are not relied on as proxies for article significance (§1.10, §1.12).
- ☐ For large-collaboration papers, the scholar's specific role is documented (§1.13).
- ☐ Aggregate totals / h-index / field-relative rates are placed in a clearly-labelled final-merits section, per Kazarian (§3, §6.1.7).

Disclaimer

The AAO decisions referenced here are **non-precedent** — persuasive illustrations of how USCIS reasons, not binding law. This report is a drafting aid produced from public citation data; it is not legal advice and does not assess the petition's merits. All analysis must be reviewed by qualified immigration counsel.

G. Citation Evidence Index

Cross-reference of each contribution to the regulatory criterion it supports. Counsel should map these to the petition's exhibit numbers.

Contribution	Core paper	Indep. cites	Supports
Contribution 1	Extreme antiscaling performance of slippery omniphobic covalently attached liquids	67	8 CFR 204.5(i)(3) — Outstanding Researcher
Contribution 2	A model to predict the oscillation frequency for drops pinned on a vertical planar surface	2	8 CFR 204.5(i)(3) — Outstanding Researcher